

How Social Gratification affects Social Network Gaming Habitual Behavior: A Sequential Mediation Model

Kashif Abrar¹, Dr. Asif Khurshid Mian², Sobia Zaman³

Abstract:

The present research has explored the role of social interaction and social presence, two components of social gratification, in shaping up social network gaming habitual behavior. The study has analyzed sequential mediation of flow experience and consumer satisfaction in between the association social gratification facets and social network gaming habitual behavior. 500 responses were collected from social gaming consumers of Pakistan using convenience sampling technique. 471 responses were found to be appropriate for data analysis. SPSS 25.0 was used for descriptive statistics, frequency distribution and correlation analysis while PROCESS SPSS Macro was used for examining the mediation effects. The proposed research model was also analyzed and validated using structural equation modelling through AMOS 22. Results of the study revealed that flow experience and consumer satisfaction play significant role as sequential mediators between social gratification facets and social network gaming habitual behavior. Consumer satisfaction was observed to play the most effective role among all determinants considered in the present research. Theoretical and practical implications, limitations and future research directions have been discussed as well.

Keywords: Social gratification, social interaction, social presence, flow experience, consumer satisfaction, social network gaming habitual behavior, Pakistan.

1. Introduction

Success of social network games (SNGs), for instance Cityville and Farmville, has paved ways for this specific niche of digital games to become one of the most illustrious sources of entertainment while enticing millions of gaming consumers. The acceptance and interest of consumers towards social network games has been increasing in past few years all across the globe (Vanwesenbeeck, Ponnet, & Walrave, 2017). For instance, candy crush, one of the most popular SNGs, is played by 93 million players daily all over the world and considering Pakistani context, more than 70 million players play candy crush every week (Zafar, 2018). Social network games are online games which are linked with or distributed through social networking sites (SNSs), such as, Facebook. Since these games are easily accessible and more convenient for the players, gaming consumers can enjoy SNGs at anytime and anyplace (Kim et al., 2019). Majority of SNGs are developed as independent applications and then integrated with social networking sites. Players are required to open SNGs and then log in via their SNSs accounts in order to experience full features provided by these games. This way SNGs are able to take advantage of existing massive networks of SNSs (Killian & Hulland, 2016).

¹ Ph.D. Scholar, Department of Management Sciences, Bahria University Islamabad, kashif_411@hotmail.com

² Senior Assistant Professor, Department of Management Sciences, Bahria University Islamabad, asif.k.mian@gmail.com

³ Senior Assistant Professor, Department of Business Studies, Bahria University Islamabad, shujaatsobia@hotmail.com

Some prior studies have focused on the factors that can lead towards prolonged consumption of SNGs across diversified contexts. Wei and Lu (2014) considered the perspective of uses and gratification theory and network externalities for understanding players' intention to play SNGs. Similarly, Park et al. (2014) identified few psychological factors that positively influence intention to play SNGs. Additionally, Su et al. (2016) studied loyalty perspective in SNGs through flow experience. Although, these studies provide significant theoretical base for understanding how to enhance frequency of play for SNGs, retaining large pool of consumers is equally important for SNGs to survive in the market of fierce competition. Most of the SNGs are freemium games as users can download and enjoy these games for free. The revenues earned by SNGs come primarily through in-game advertisements and selling virtual goods. Therefore, understanding habitual behavior formation of social network gaming consumers becomes imperative for long-term sustainability of SNGs.

The significance of social component as an influencer to continuously play social network games has been acknowledged by quite a few researchers in recent times (Hamari et al., 2017). However, research from the perspective of social components and habitual behavior remains scarce particularly in SNGs context. There are studies that have acknowledged the indirect role of some factors such as flow experience in online gaming perspective that lead towards continuous gameplay behavior. Hsiao and Chen (2016) identified some factors that can help to attract SNGs players but this study did not discuss about mediating role of other factors that can affect behavior of players within SNGs. Since, the indirect role of some factors, such as flow experience and consumer satisfaction, can be important to determine prolonged consumption behavior of SNGs (Liu, 2017), the present study has aimed at exploring social network gaming habitual behavior through indirect effect of flow experience and consumer satisfaction. The study intends to shed light on key determinants of social network gaming habitual behavior and help to explain how to retain large pool of consumers in SNGs context. From practitioners' perspective, the present study provides suggestions regarding important elements and strategies based on preferences of SNGs players that can be considered by SNGs service providers for developing SNGs in a highly competitive marketplace.

2. Literature Review

2.1 Social Network Gaming Habitual Behavior

Habit is a term which is explained as a mental construct and it is based on automaticity regardless of previous behaviors and self-recognition frequency. In SNG context, De Grove and Van Looy (2015) defined it as "long-standing motives to play a social networking game". Habitual behavior has been extensively studied in social psychology, food consumption, organization behavior and health science (Griffiths, 2018). However, in information system (IS) context, studies focusing on habitual behavior are very scarce. Molyneux (2018) identified media usage habit to be a primary motive for media consumption behaviors. Moreover, Hu et al. (2018) argued that users pay more attention and prolong their consumption of a specific media as a result of media habit. It is important to mention that habitual behavior aids in minimizing mental efforts and saving time thus it generates positive effects, therefore it is imperative to focus on habitual behavior instead of addiction (Chiu & Huang, 2015). The present study has focused on analyzing motivations and media habits in social network gaming context.

2.2 Uses and Gratification Theory

One of the most commonly adopted theories in the domain of information systems and consumer behavior is the theory of uses and gratification (Ifinedo, 2016). Furthermore, many researchers have studied this theory in diversified settings as this theory is not confined to limited number of constructs or factors (Choi et al., 2016). For past few years, marketing researchers have been actively investigating the reasons behind prolonged consumption behavior of digital gaming consumers. The widely accepted theories that have been considered by researchers to study this phenomenon include uses and gratification theory (Mahfuzra et al., 2019), self-determination (Proulx, Romero, & Arnab, 2017) and social cognitive theory (De Grove, Cauberghe, & Van Looy, 2016). Among these theories, the uses and gratification theory, being domain specific, is considered to be an adequate and effective approach for understanding consumer's motivation in social network gaming context (Li et al., 2015).

The theory of uses and gratification has an assumption that individuals make use of specific platforms for fulfilling certain needs and wants. This theory has its implications in order to understand media consumption patterns and motives behind prolonged consumption patterns pertaining to social network games (Ifinedo, 2016). A study conducted by Wei & Lu (2014) elaborated that the entire gaming process is actively influenced by gaming consumers as they have potential to diversify game consumption experiences and play choices. This clearly indicates that game players engage within the game intentionally and they also anticipate different kinds of gratification during the game play. Hence, the theory of uses and gratification has been proposed as an appropriate approach to study interactive nature of game play across internet mediated environment i.e. social media platforms.

The present study has concentrated on examining habitual behavior of Pakistani consumers in social network gaming context. For this purpose, the "consumer gratification" as postulated by uses and gratification theory has been considered for analysing the determinants that result in motivating consumers of Pakistan to keep on playing a social network game for a longer time period. There are several types of gratification (social, hedonic, utilitarian, content, internet) that have been considered by marketing researchers in diversified contexts (Ifinedo, 2016; Kaimann, Stroh-Maraun, & Cox, 2018). However, in the present research, social gratification has been considered since quite a few studies in online gaming context and social network gaming context have suggested social gratification to be a core gratification (Li et al., 2015; Huang, Bao, & Li, 2017). Furthermore, this study has also focused on analyzing the mediating role of flow experience and consumer satisfaction because the significance to examine the role of these mediators in online gaming context has been elaborated in few prior studies (Chang, 2013; Ghazali, Mutum, & Woon, 2019). Therefore, the present study has aimed at identifying the impact of social gratification over social network gaming habitual behavior with concentration of flow experience and consumer satisfaction as sequential mediators.

2.2.1 Social Gratification

Quite a few researches that have incorporated theory of uses and gratification, have particularized that motivations for the purpose of enhancing social relationships of individuals (social integrative motivations) are important predictors for media selection media consumption behavior. For example, Facebook is a social networking site that helps to connect people online and smartphone technology is providing flexible platform for this reason (Chen, Kim, & Lin, 2015). Similarly, social network games are expected to create and maintain social relationships among individuals

and consequently, this may increase frequency of play of social network games. Molyneux, Vasudevan, and Gil de Zúñiga (2015) examined the influence of online community engagement of SNGs and concluded that just like brand community engagement, some SNGs have created their own online communities over different social networking sites which are helping game players to interact with others and discuss topics related to the game. This way, SNG can be viewed as “conversation starter” that may assist the SNG players to establish new relationships. Killian and Hulland (2016) studied behavior of SNG consumers and concluded that SNGs serve as an effective medium for players to get in touch with one another. Alzahrani et al. (2017) further elaborated that most of the times, SNGs are played with friends online which increases the duration of interaction among friends while fostering stronger relationships.

One of the most important reasons for using online social media platforms is to maintain closer bonds among friends. Social gratification in online gaming context is important as players actively share their accomplishments with a game, at different levels, with their friends and other players. According to Li et al. (2015), social gratification refers to “the fulfillment of the urge among consumers to engage socially across the gaming platforms”. Therefore, it is expected that social gratification directly relates to prolonged consumption of a specific SNG since individuals tend to engage with an online platform not for the purpose of primary activity, but for spending more time with friends (Killian & Hulland, 2016). Furthermore, social gratification has been proven to be a strong predictor of continuous usage behavior of SNGs (Li et al., 2015). Review of previous literature suggests that in online gaming context, two facets of social gratification have been most commonly used i.e. social interaction and social presence. Both of these facets have been investigated in numerous prior studies and they have comprehensively explained the concept of social gratification.

2.2.1.1 Social Interaction

In social network gaming context, social interaction can be explained as “the extent to which players use SNG as a social environment to interact with others” (Deci & Ryan, 2010). Many researchers believe that social interaction can enable players to be motivated enough to keep playing the game. Argyle (2017) argued that social interaction can be regarded as an essential motivation for the users who value socializing, belonging to a specific community, sharing experiences and making new relationships. A simple interaction among players while playing online games can also motivate the players to continue their gaming activity for a longer period of times, which makes social interaction an interesting prospect to study in social network gaming context. It can also be deliberated as a unique element within the game that actually goes beyond the gaming activity itself and implicates exchange of information and players meeting one another online. McGloin, Hull and Christensen (2016) elaborated that social interaction comprises of characteristics of cooperation and competition because SNG players are not only competing with others but they are also assisting others in overcoming some challenging tasks at different levels. This way, social interaction goes beyond competition element particularly in SNG context.

2.2.1.2 Social Presence

Li et al. (2015) described social presence within social network gaming context as “the extent to which a player’s psychological sense of physically interacting and establishing a personal connection with others via playing a SNG is achieved”. Social presence seems to be significant for users as it is a psychological factor that makes users believe that they are a part of internet mediated environment and they are actively and physically interacting with others to make personal

connections and association (Van Doorn et al., 2017). Furthermore, social presence makes players believe that they are socially likable and competent within the online game and consequently, it generates positive perception among individuals (Baabdullah, 2018). Social presence is an integral component of social gratification not only in digital gaming context but also in SNG context as well and it has been found to enhance user engagement in online games (Baabdullah, 2018). As the social encounters are increasing within SNGs, it has been observed that social gratification plays an influential role in determining prolonged consumption behaviour in the domain of social network games.

2.3 Flow Experience

Csikszentmihalyi (1990) presented flow theory that explained flow experience as “the holistic experience that people feel when they act with total involvement”. Flow experience characterizes a situation where individuals are deeply absorbed in the activity they enjoy and sometimes they lose consciousness about time passing (Csikszentmihalyi & Nakamura, 2018). The behavior of consumers within internet mediated environment may be described by means of flow experience and talking specifically about digital gaming context, games can gauge immersion behavior of players into flow experience (Harmat et al., 2015). A well designed game that can provide cheerful experience to the players can definitely transport those players into the state of flow (Wang, Wu, & Tsau, 2019). The activities in which flow experience plays a significant role, the outcomes (for example intention, continuous usage, loyalty) are also affected by flow experience. During a certain activity, when people experience flow, there is a strong probability for repetition of that particular activity (Csikszentmihalyi & Nakamura, 2018). The repetition of the activity can easily be developed into habitual behavior which elaborates importance of flow experience. In SNG context, flow experience has been rarely examined (Huang, Bao, & Li, 2017) although few researchers have elaborated the need to identify the role played by flow experience in online and social network gaming context (Ghazali, Mutum, & Woon, 2019).

2.4 Consumer Satisfaction

Consumer satisfaction has been an essential and major component of marketing literature since early 1950s. When it comes to determining subsequent consumer behavior, consumer satisfaction may be considered as the single most important construct. According to Yuan (2015) “consumer satisfaction is related to the quality of the service, product and the environment in which the product/service is being offered. Being an abstract concept, the term refers to the fulfillment of the needs and desires of the consumers”. Most of the recent studies have considered ECM (expectation–confirmation model), proposed by Bhattacharjee (2001a), for studying satisfaction and continuous usage behavior in IS products/services context. From IS products/services perspective, consumer satisfaction and retention are critical factors since many costs are linked with acquiring new consumers that include configuring advertising strategies and initiating new accounts (Chang, 2013). Shin (2017) argued that a notion of satisfaction is formed among consumers when their certain needs (for instance, social needs) are gratified by using a particular product or service. In digital applications and gaming context, the level of satisfaction of consumers has been identified to have a strong influence over attitude, continuous usage and intention (Sailer et al., 2017). The present study has also focused on the significance of studying consumer satisfaction as an important determinant of social network gaming habitual behavior.

3 Conceptual Framework and Hypotheses Development

Social interaction has been proven to be a critical factors that leads towards prolonged consumption of social networking sites where SNG players are able to interact with others regardless of location, age and gender (Moriuchi, 2016). Moreover, social interaction has a significant and positive impact over flow experience in online gaming context which results in continuous usage behavior (Su et al., 2016). When players are able interact more with others, this can lead them towards state of flow. Furthermore, social interaction also affects consumer satisfaction in digital gaming context because satisfied players engage with the game for a longer period of time (McGloin, Hull, & Christensen, 2016). Additionally, Kang, Lee and Namkung (2018) argued that flow experience has some positive outcomes in virtual environments which include consumer satisfaction and continuous usage behaviour. Therefore, it is expected that in SNG context, flow experience and consumer satisfaction may sequentially mediate the association of social interaction and habitual behaviour. Hence, it is hypothesized that:

H₁: The association between social interaction and social network gaming habitual behaviour is sequentially mediated by flow experience and consumer satisfaction.

Social presence encourages SNG players to find social media where they can build extensive social connections as the players are willing to develop associations and interact physically with other players (Baabdullah, 2018). Social presence also leads towards prolonged consumption of SNSs (Li et al., 2015). Furthermore, a sense of immersion is generated as a result of social presence in online games which signifies positive association of social presence and flow experience in online gaming context (Zhou, 2019). Also, social presence has a significant and positive association with consumer satisfaction within social network games which encourages repeat gameplay (Li et al., 2015). Moreover, flow experience has been identified as a strong determinant of consumer satisfaction and continuous usage behavior within virtual contexts (Kang, Lee, & Namkung, 2018). Therefore, it is expected that in SNG context, flow experience and consumer satisfaction may sequentially mediate the association of social presence and habitual behaviour. Hence, it is hypothesized that:

H₂: The association between social presence and social network gaming habitual behaviour is sequentially mediated by flow experience and consumer satisfaction.

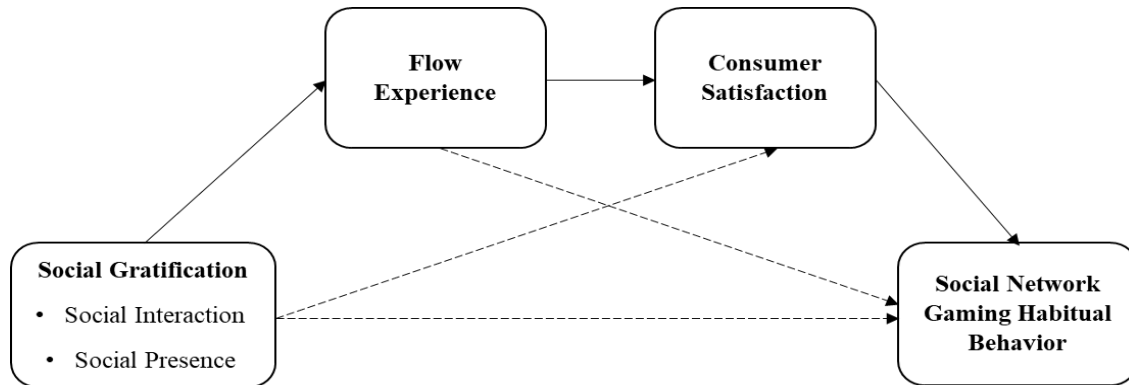


Figure 1: Conceptual Framework

4 Methodology

Quantitative research methodology has been adopted by the authors for present research which has been used in few prior similar studies (Huang, Bao, & Li, 2017). For all variables, data was collected at one point in time, hence the time horizon was cross sectional. The target market for the present study comprised of players of famous SNGs living in major cities of Pakistan. Data was gathered via online questionnaire which comprised of few demographic questions and items for measuring the selected variables. The variable items, as shown in table-1, were adapted from several validated, generalized and reliable scales. All items were accounted for by using 5-point Likert scale indicating “5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree and 1 = Strongly Disagree”.

Table 1: Variables, Number of Items, Items Source, Cronbach’s Alpha, Mean and Standard Deviation

Variable	No. of Items	Items Source	Cronbach’s Alpha	Mean (SD)
Social Interaction	5	Lee (2009) and Lee and Tsai (2010) Colwell (2007)	0.89	3.63 (0.84)
Social Presence	5	Weibel et al. (2008) and Wu et al. (2010)	0.85	3.51 (0.80)
Flow Experience	3	Chou & Ting (2003)	0.91	3.28 (0.72)
Consumer Satisfaction	3	Park and del Pobil (2013)	0.70	3.45 (0.79)
SNG Habitual Behavior	4	Verplanken and Orbell (2003)	0.83	3.77 (0.86)

Web based questionnaire has been considered as a suitable approach for data collection in marketing researches (Saunders et al., 2009; Ifinedo, 2016). The web based survey strategy has been adopted in the present study since it is reliable as well as cost effective strategy and provides instant access to numerous potential participants. The purpose of using online questionnaire was that it ensures internet literacy as well as complete response and it is convenient in terms of recording information. The online questionnaire was distributed via Facebook groups of Pakistani gaming consumers. Convenience sampling was used for collecting 500 questionnaires that were filled completely, in all aspects, by the respondents. Out of these, few questionnaires were dropped as they were observed to be filled with a very high frequency of selecting same answer for all questions. 471 responses were considered appropriate and they were used for further analysis. All of the respondents participated in the study voluntarily and no incentives or rewards were offered. Each respondent was allowed to record the response only once and afterwards any change or modification in the submitted response was not allowed. SPSS 25.0 and PROCESS SPSS Macro (Hayes, 2017) were used for analyzing descriptive statistics, frequency distribution, reliability, correlation and mediation effects.

5 Results and Discussion

5.2 Reliability and Validity Analysis

The recommended range of Cronbach's Alpha coefficient for accepting reliability of the data, according to Nunnally and Bernstein (1994) is 0.7 to 0.95. As shown in table-1, the reliability measure for all variables falls within acceptable range. The mean and standard deviation values for all variables have also been summarized in table-1.

5.3 Correlation Analysis

Person's correlation analysis was executed in order to determine association among main constructs of the study prior to validating the proposed hypotheses. Table-2 depicts that correlation coefficients (r) are significant and range between 0.143 and 0.783. Precisely, the two independent variables (social interaction and social presence) of the study had marginally significant correlation. Hence, for hypotheses testing, sequential mediation analysis on independent variables have been carried out separately.

Table 2: Correlation Analysis

Variable	SI	SP	FL	CS	SNGH
SI	1				
SP	.143*	1			
FL	.699***	.206*	1		
CS	.712***	.219**	.686***	1	
SNGH	.598***	.264**	.619***	.783***	1

*** $p < .01$, ** $p < .05$, * $p < .1$

5.4 Hypotheses Testing

For examining the role of social interaction and social presence on flow experience and consumer satisfaction, and the mediating impact of flow experience and consumer satisfaction on social network gaming habitual behavior, multi-step mediation analyses have been executed using model 6 in PROCESS SPSS Macro (Hayes, 2017). This program is generally used for analyzing several kinds of path models, for instance, multiple as well as sequential mediation models using bootstrapping. While using bootstrap method, the null hypothesis (i.e. "there is no indirect effect") is rejected when "zero" is excluded between maximum and minimum values of confidence interval. As suggested by Preacher and Hayes (2004) and Hayes (2017), confidence interval and number of resamples were set to 95% and 5000 respectively. With each independent variable, a series of path model analyses have been executed.

5.4.1 Effect of Social Interaction on Social Network Gaming Habitual Behavior

As an outcome of sequential mediation model analysis for impact of social interaction on SNG habitual behavior, direct path for influence of social interaction over SNG habitual behavior is not significant ($\beta = 0.146$, $SE = 0.072$, 95% $CI = [-0.08 \text{ to } 0.31]$, $p = 0.238$). Nevertheless, indirect effect of mediating path (where social interaction affecting SNG habitual behavior has been mediated by flow experience and consumer satisfaction) is significant ($\beta = 0.17$, $SE = 0.06$, 95% $CI = [0.07 \text{ to } 0.23]$). As a result, the first hypothesis of the study is accepted. When social interaction within a particular SNG increases, SNG consumers perceive higher level of flow

experience which has positive influence over SNG habitual behavior by enhancing level of consumer satisfaction. Considering first mediating variable only (flow experience), the indirect effect is insignificant ($\beta = 0.07$, $SE = 0.04$, 95% CI = $[-0.03$ to $0.15]$). On the other hand, indirect effect of path that involves second mediating variable (consumer satisfaction) is significant ($\beta = 0.31$, $SE = 0.08$, 95% CI = $[0.11$ to $0.39]$). All these results have been summarized in table-3. Social interaction within SNGs results in consumer satisfaction which further leads towards SNG habitual behavior. Hence, consumer satisfaction plays an integral role in formation of habitual behavior in SNG context. Figure 2 shows sequential mediation effects of flow experience and consumer satisfaction between social interaction and SNG habitual behavior.

Table 3: Model Coefficients for Sequential Mediation Model (Effect of Social Interaction on SNG Habitual Behavior)

Antecedent	Consequent								
	M1(Flow Experience)			M2 (Consumer Satisfaction)			Y (Social Network Gaming Habit)		
	Coeff,	SE	P	Coeff,	SE	p	Coeff,	SE	p
X (Social Int.)	.440	.052	<.001	.248	.065	<.001	.146	.072	.238
M1 (FL)				.239	.075	<.001	.159	.081	.115
M2 (CS)							.589	.109	<.001
Constant	1.271	.213	<.001	.534	.201	<.05	.172	.258	.530
	R ² =.401			R ² =.489			R ² =.528		
	F(1,99)=69.421, p<.001			F(2,98)=42.937, p<.001			F(3,97)=39.332, p<.001		
Direct Effect of SI on SNGH					B=.146, SE=.07, 95% CI= (-.08 to .31), p=.238				
Indirect Effect									
SI →FL→SNGH					B=.07, SE=.04, 95% CI= (-.03 to.15) (insignificant)				
SI →FL→CS→SNGH					B=.17, SE=.06, 95% CI= (.07 to .23) (significant)				
SI →CS→SNGH					B=.31, SE=.08, 95% CI= (.11 to .39) (significant)				

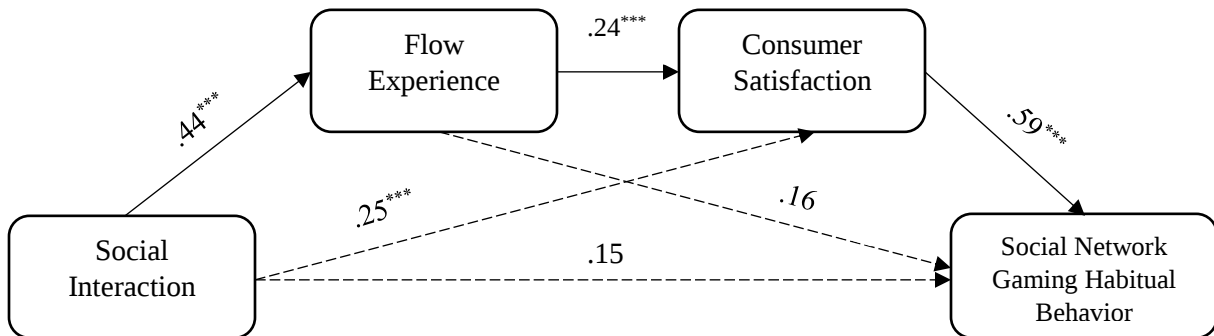


Figure 2: Sequential Mediation Model for Effect of Social Interaction on SNG Habitual Behavior (*) $p<.001$)**

5.4.2 Effect of Social Presence on Social Network Gaming Habitual Behavior

Secondly, as an outcome of sequential mediation model analysis for impact of social presence on SNG habitual behavior, direct path for influence of social presence over SNG habitual behavior is not significant ($\beta = 0.06$, $SE = 0.05$, 95% CI = $[-0.07$ to $0.26]$, $p = 0.253$). But, indirect effect of mediating path (where social presence affecting SNG habitual behavior has been mediated by flow

experience and consumer satisfaction) is significant ($\beta = 0.09$, $SE = 0.06$, 95% CI = [0.02 to 0.20]). Therefore, the second hypothesis of the study is also accepted. To explain this finding further, as social presence within a particular SNG is perceived to be more, this leads towards flow experience. Flow experience results in higher level of consumer satisfaction which ultimately results in SNG habitual behavior. Bearing in mind the first mediating variable only (flow experience), the indirect effect is insignificant ($\beta = 0.05$, $SE = 0.04$, 95% CI = [-0.02 to 0.18]). Additionally, indirect effect of path that involves second mediating variable (consumer satisfaction) is also insignificant ($\beta = 0.04$, $SE = 0.07$, 95% CI = [-0.03 to 0.21]). The results have been summarized in table-4. Figure 3 shows sequential mediation effects of flow experience and consumer satisfaction between social presence and SNG habitual behavior.

Table 4: Model Coefficients for Sequential Mediation Model (Effect of Social Presence on SNG Habitual Behavior)

Antecedent	Consequent								
	M1(Flow Experience)			M2 (Consumer Satisfaction)			Y (Social Network Gaming Habit)		
	Coeff,	SE	P	Coeff,	SE	p	Coeff,	SE	p
X (Social Pres.)	.113	.084	.047	.056	.069	.299	.061	.052	.318
M1 (FL)				.491	.057	<.001	.193	.088	<.05
M2 (CS)							.519	.099	<.001
Constant	2.235	.274	<.001	..876	.301	<.01	.054	.289	.717
	R ² =.032			R ² =.391			R ² =.518		
	F(1,99)=.0699, p=.060			F(2,98)=28.121, p<.001			F(3,97)=37.769, p<.001		
Direct Effect of SP on SNGH					B=.06, SE=.05, 95% CI= (-.07 to .26), p=.253				
Indirect Effect									
SP →FL→SNGH					B=.05, SE=.04, 95% CI= (-.02 to .18) (insignificant)				
SP →FL→CS→SNGH					B=.09, SE=.06, 95% CI= (.02 to .20) (significant)				
SP →CS→SNGH					B=.04, SE=.07, 95% CI= (-.03 to .21) (insignificant)				

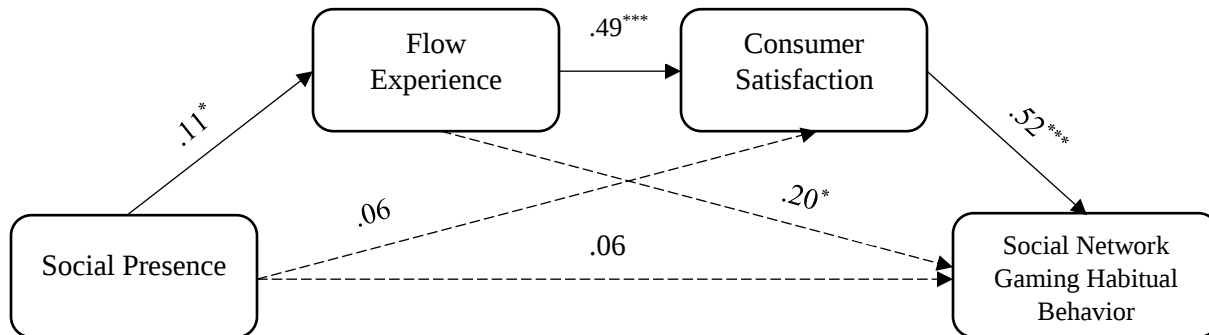


Figure 3: Sequential Mediation Model for Effect of Social Presence on SNG Habitual Behavior (*p<.05, ***p<.001)

Furthermore, the proposed research model has also been analyzed through SEM (structural equation modeling) technique in order to examine the associations for all constructs including social interaction and social presence in one model. CFA (confirmatory factor analysis) results depict that fitness of overall measurement model can be accepted ($\chi^2/df = 1.015$, $p < 0.001$, CFI = 0.912, TLI = 0.900, RMSEA = 0.054). The construct validity for each variable has been satisfied as the standardized coefficient for items is found to be significant ($p < 0.001$). Composite reliability and average variance extracted values for all constructs are exceeding .08 and .059 respectively

which is considered satisfactory. Moreover, the convergent validity and discriminant validity for all variables has also been confirmed. Afterwards, SEM analysis has been carried out which also depicts acceptable structural model fit ($\chi^2/df = 1.017$, $p < 0.001$, CFI = 0.908, TLI = 0.896, RMSEA = 0.056). The outcomes of SEM analysis indicate that as social interaction increases, flow experience is also enhanced ($\beta = 0.73$, $p < 0.001$). Consumer satisfaction also increases with an increase in flow experience ($\beta = 0.76$, $p < 0.001$). The positive impact of consumer satisfaction on SNG habitual behavior is significant as well ($\beta = 0.82$, $p < 0.001$). Hence, SEM analysis has also confirmed the first hypothesis. Conversely, the effect of social presence on flow experience is insignificant ($\beta = 0.11$, $p = 0.219$). This outcome might be due to existence of correlation among social interaction and social presence. The Pearson's correlation between these two independent variables has been found to be marginally significant ($r = .143$, $p < 0.1$), while SEM results have identified significant covariance among social interaction and social presence.

6 Discussion and Conclusion

The present research has identified impact of social gratification on social network gaming habitual behavior through sequential mediation of flow experience and consumer satisfaction. The respondents comprised of experienced SNG consumers in Pakistan. The components of social gratification (social interaction and social presence) have indirect influence over SNG habitual behavior and these indirect effects are sequentially mediated by flow experience and consumer satisfaction. When SNG consumers experience higher level of social interaction and social presence, this leads towards flow experience which results in consumers satisfaction that ultimately results in formation of SNG habitual behavior. This finding adds to prior studies, which indicated that social factors positively affected continuous intentions to play (Killian & Hulland, 2016; Alzahrani et al., 2017).

A large number of prior researches on gaming using uses and gratification theory have only identified direct impact of social gratification over continuous intention to play (Huang, Bao, & Li, 2017). Whereas few other studies have focused on how social gratification influences flow experience and others have investigated how this flow experience can in turn affect behavioral intentions of players (Li et al., 2015; Wang, Wu, & Tsau, 2019). The present research has proposed an integrated and holistic framework to explore sequential mediating effect of flow experience and consumer satisfaction on SNG habitual behavior in order to extend previous studies that have primarily focused on role of social gratification only. However, opposed to findings of prior studies and contrary to expectations, the analysis of sequential mediation model has revealed that direct effect of social interaction and social presence over SNG habitual behavior and the indirect effect mediated by flow experience is not significant. The facets of social gratification have significant and positive influence over SNG habitual behavior only when the effect is mediated by consumer satisfaction. The consumer satisfaction would then enhance SNG habitual behavior, and thus the findings support and extent outcomes of prior studies focusing on continuous playing intention (Shin, 2017; Sailer et al., 2017).

Some prior studies, focusing on social gratification, have considered role of flow experience as core mediating variable which influences consumer behavior in different contexts (Su et al., 2016). While, few recent studies have highlighted the need to consider more factors that may play critical role between flow experience and behavior of consumers (Ghazali, Mutum, & Woon, 2019). However, findings have specified that only flow experience, as a result of social gratification, is not sufficient for prolonged SNG consumption. Higher level of satisfaction must

be provided to SNG consumers in order to prolong their exposure with a particular SNG. The results are in accordance with Chang (2013) and Sailer et al. (2017) who identified significant mediating role of consumer satisfaction in digital gaming context which leads towards continuous usage behavior. Hence, it is important for SNG developers to consider the element of user satisfaction in SNG context instead of just incorporating the factors of social gratification while designing SNGs. Even though there is strong presence of flow experience in SNGs, without consumer satisfaction, SNGs might fail to retain large pool of regular players.

Focusing specifically on habitual behavior in social network gaming context that too from developing countries perspective is a rare attempt and novel contribution of the present research. Literature on SNG habitual behavior in Pakistani consumer market is very scarce. The attempt to add knowledge in this particular domain is an important theoretical contribution of this research. Social network gaming is gaining popularity all across the world including developing economies. The present study has identified some important determinants of SNG habitual behavior in form of social gratification, flow experience and consumer satisfaction. All of these factors and their specific direct and indirect linkages must be taken into consideration by SNG developers and marketers if they are to gain competitive advantage among fierce competition. SNG service providers should regularly inject new elements to elicit social interaction and social presence of SNG players within the game. Additionally, some in-game rewards can be offered to the SNG players on the basis of sharing their performance and opinions over different social networking platforms. Special attention needs to be given to satisfy all sorts of needs of SNG players pertaining to social gratification. The maximum output can be achieved only if all of these constructs are considered simultaneously while designing a particular SNG.

7 Limitations and Future Research Directions

The present study has identified insignificant direct effect of both facets of social gratification over SNG habitual behavior. This elaborates need to identify other factors that have strong direct influence over SNG habitual behavior. Only two components of social gratification have been considered in the present research. Future studies can examine the role of other facets of social gratification, for instance social enhancement, in SNG context. Because of time and budget constraints, the time horizon for present study was cross sectional. Future studies can opt for longitudinal data collection to identify if there is any change in behavior of SNG players after some time period. The proposed research model has been tested in Pakistan only. Future researchers can validate the same model in other developing as well as developed countries having diversified cultural backgrounds.

References

- Abrar, K., Zaman, S., & Satti, Z. W. (2017). Impact of online store atmosphere, customized information and customer satisfaction on online repurchase intention. *Global Management Journal for Academic & Corporate Studies*, 7(2), 22-34.
- Abrar, K., Saeed, M. A., Ahmad, I., & Ali, S. (2020). How Customer Experience Quality affects Customer Satisfaction-Loyalty with Moderating role of Competitive Choices and Familiarity: Assessment of Private Hospitals in Pakistan. *Sukkur IBA Journal of Management and Business*, 7(1), 75-91.

- Alzahrani, A. I., Mahmud, I., Ramayah, T., Alfarraj, O., & Alalwan, N. (2017). Extending the theory of planned behavior (TPB) to explain online game playing among Malaysian undergraduate students. *Telematics and Informatics*, 34(4), 239-251.
- Argyle, M. (2017). *Social Interaction: Process and Products*. Routledge.
- Baabdullah, A. M. (2018). Consumer adoption of Mobile Social Network Games (M-SNGs) in Saudi Arabia: The role of social influence, hedonic motivation and trust. *Technology in Society*, 53, 91-102.
- Bhattacharjee, A. (2001a). Understanding information systems continuance: an expectation-confirmation model. *MIS quarterly*, 25(3) 351-370.
- Chang, C. C. (2013). Examining users' intention to continue using social network games: A flow experience perspective. *Telematics and Informatics*, 30(4), 311-321.
- Chen, K. J., Kim, J., & Lin, J. S. (2015). The effects of affective and cognitive elaborations from Facebook posts on consumer attitude formation. *Journal of Consumer Behaviour*, 14(3), 208-218.
- Chiu, C. M., & Huang, H. Y. (2015). Examining the antecedents of user gratification and its effects on individuals' social network services usage: the moderating role of habit. *European Journal of Information Systems*, 24(4), 411-430.
- Choi, E. K., Fowler, D., Goh, B., & Yuan, J. (2016). Social media marketing: applying the uses and gratifications theory in the hotel industry. *Journal of Hospitality Marketing & Management*, 25(7), 771-796.
- Csikszentmihalyi, M. (1990). *Flow. The Psychology of Optimal Experience*. New York (HarperPerennial) 1990.
- Csikszentmihalyi, M., & Nakamura, J. (2018). Flow, altered states of consciousness, and human evolution. *Journal of Consciousness Studies*, 25(11-12), 102-114.
- De Grove, F., & Van Looy, J. (2015). Young people at play: Behaviors, motives and social structure. *Computers In Human Behavior*, 43(1), 263-271.
- De Grove, F., Cauberghe, V., & Van Looy, J. (2016). Development and validation of an instrument for measuring individual motives for playing digital games. *Media Psychology*, 19(1), 101-125.
- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological inquiry*, 11(4), 227-268.
- Ghazali, E., Mutum, D. S., & Woon, M. Y. (2019). Exploring player behavior and motivations to continue playing Pokémon GO. *Information Technology & People*, 32(3), 646-667.
- Griffiths, M. D. (2018). Adolescent social networking: how do social media operators facilitate habitual use?. *Education and Health*, 36(3), 66-69.
- Hamari, J., Alha, K., Järvelä, S., Kivikangas, J. M., Koivisto, J., & Paavilainen, J. (2017). Why do players buy in-game content? An empirical study on concrete purchase motivations. *Computers in Human Behavior*, 68, 538-546.

- Harmat, L., de Manzano, Ö., Theorell, T., Högman, L., Fischer, H., & Ullén, F. (2015). Physiological correlates of the flow experience during computer game playing. *International Journal of Psychophysiology*, 97(1), 1-7.
- Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford publications.
- Hsiao, K. L., & Chen, C. C. (2016). What drives in-app purchase intention for mobile games? An examination of perceived values and loyalty. *Electronic commerce research and applications*, 16, 18-29.
- Hu, T., Stafford, T. F., Kettinger, W. J., Zhang, X. P., & Dai, H. (2018). Formation and effect of social media usage habit. *Journal of Computer Information Systems*, 58(4), 334-343.
- Huang, T., Bao, Z., & Li, Y. (2017). Why do players purchase in mobile social network games? An examination of customer engagement and of uses and gratifications theory. *Program*, 51(3), 259-277.
- Ifinedo, P. (2016). Applying uses and gratifications theory and social influence processes to understand students' pervasive adoption of social networking sites: Perspectives from the Americas. *International Journal of Information Management*, 36(2), 192-206.
- Kaimann, D., Stroh-Maraun, N., & Cox, J. (2018). A duration model analysis of consumer preferences and determinants of video game consumption. *Journal of Consumer Behaviour*, 17(3), 290-301.
- Kang, J. W., Lee, H., & Namkung, Y. (2018). The impact of restaurant patrons' flow experience on SNS satisfaction and offline purchase intentions. *International Journal of Contemporary Hospitality Management*, 30(2), 797-816.
- Killian, G., & Hulland, J. (2016). Marketing promotions in social network games: Making them work. *Journal of Digital & Social Media Marketing*, 4(1), 54-69.
- Kim, M. K., Kim, H. Y., & Kang, Y. A. (2019). Influence of gift-giving in social network games on social capital: Relationship types, gift-giving types, and the big five factors of personality. *International Journal of Human-Computer Interaction*, 35(1), 38-52.
- Li, H., Liu, Y., Xu, X., Heikkilä, J., & Van Der Heijden, H. (2015). Modelling hedonic IS continuance through the uses and gratifications theory: An empirical study in online games. *Computers in Human Behavior*, 48(1), 261-272.
- Liu, C. C. (2017). A model for exploring players flow experience in online games. *Information Technology & People*, 30(1), 139-162.
- Mahfuzra, H., Hidayanto, A. N., Hapsari, I. C., & Utari, P. (2019). What drives the intention to repurchase digital items in digital games? An integration of uses and gratifications theory and the expectation-confirmation model. *International Journal of Business Information Systems*, 30(3), 253-276.
- McGloin, R., Hull, K. S., & Christensen, J. L. (2016). The social implications of casual online gaming: Examining the effects of competitive setting and performance outcome on player perceptions. *Computers in Human Behavior*, 59, 173-181.

- Molyneux, L. (2018). Mobile news consumption: A habit of snacking. *Digital Journalism*, 6(5), 634-650.
- Molyneux, L., Vasudevan, K., & Gil de Zúñiga, H. (2015). Gaming social capital: Exploring civic value in multiplayer video games. *Journal of Computer-Mediated Communication*, 20(4), 381-399.
- Moriuchi, E. (2019). *Social media marketing: Strategies in utilizing consumer-generated content*. Business Expert Press.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychological theory*. New York: MacGraw-Hill.
- Park, E., Baek, S., Ohm, J., & Chang, H. J. (2014). Determinants of player acceptance of mobile social network games: An application of extended technology acceptance model. *Telematics and Informatics*, 31(1), 3-15.
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior research methods, instruments, & computers*, 36(4), 717-731.
- Proulx, J. N., Romero, M., & Arnab, S. (2017). Learning mechanics and game mechanics under the perspective of self-determination theory to foster motivation in digital game based learning. *Simulation & Gaming*, 48(1), 81-97.
- Sailer, M., Hense, J. U., Mayr, S. K., & Mandl, H. (2017). How gamification motivates: An experimental study of the effects of specific game design elements on psychological need satisfaction. *Computers in Human Behavior*, 69, 371-380.
- Saunders, M., Lewis, P., Thornhill, A., & Wilson, J. (2009). Business research methods. *Financial Times, Prentice Hall: London*.
- Shin, D. H. (2017). Conceptualizing and measuring quality of experience of the internet of things: Exploring how quality is perceived by users. *Information & Management*, 54(8), 998-1011.
- Su, Y. S., Chiang, W. L., Lee, C. T. J., & Chang, H. C. (2016). The effect of flow experience on player loyalty in mobile game application. *Computers in Human Behavior*, 63, 240-248.
- Van Doorn, J., Mende, M., Noble, S. M., Hulland, J., Ostrom, A. L., Grewal, D., & Petersen, J. A. (2017). Domo arigato Mr. Roboto: Emergence of automated social presence in organizational frontlines and customers' service experiences. *Journal of service research*, 20(1), 43-58.
- Vanwesenbeeck, I., Ponnet, K., & Walrave, M. (2017). Young adolescents' advertising literacy and purchase intention in social network games: Influence of perspective taking and need for cognition. *Journal of Consumer Behaviour*, 16(1), 23-33.
- Wang, C. H., Wu, K. C., & Tsau, S. Y. (2019). Flow Learning Experience: Applying Marketing Theory to Serious Game Design. *Journal of Educational Computing Research*, 57(2), 417-447.

- Wei, P. S., & Lu, H. P. (2014). Why do people play mobile social games? An examination of network externalities and of uses and gratifications. *Internet Research*, 24(3), 313-331.
- Yuan, B. (2015). *Factors Influencing Customers Satisfaction In Online Shopping* (Doctoral dissertation, UTAR).
- Zhou, T. (2019). The effect of flow experience on users' social commerce intention. *Kybernetes*.
- Zafar, N. (2018). Candy Crush Addiction, Executive Functioning and CGPA of University Students of Lahore. *Bahria Journal of Professional Psychology*, 17(1), 67-82.